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BLUE MOLD CONTROL in TOBACCO BEDS



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BLUE MOLD is a serious plant-bed problem throughout the flue-cured tobacco area. In most other areas it is also more or less destructive. Growers in Georgia, South Carolina, and North Carolina who do not use blue mold control treatment often lose half to nearly all their plants.

Treatments Make Smaller Beds Possible

Growers used to plant about 50 square yards of bed for each field acre. Now that blue mold has become a problem, they often sow about 100 square yards. Even so they may still be short of plants during years when blue mold is severe. Besides, the growth of the plants may be slowed up and transplanting delayed from 2 to 6 weeks. It is much more practical to make and treat smaller seedbeds. Good beds that are well cared for and protected against blue mold have yielded 30,000 plants or more per 100 square yards, and even ordinary beds may yield 15,000 plants or enough to set almost 3 acres.

Sow New Beds at the Proper Time

Blue mold may live over in the soil. Make new beds

A sprayed bed that yielded plants at the rate of 7.3 acres per 100 square yards of bed.



if possible. If old beds must be used, burn thoroughly or treat the soil in the fall with 1 pound of Uramon and half-a-pound of Cyanamid for every square yard. As neither treatment is sure to get rid of all infection, treatment for blue mold control should be begun early in old beds. Do not try to escape blue mold by early sowing. If you sow the seed too early, plants may be damaged by frost or come on too soon. Sow at the proper time for your locality. Then use gas, spray, or dust treatments for protection.

What is the Best Treatment?

Gas, spray, and dust treatments are all good. Each has its advantages. If you are now using one of these methods, keep on with it. The details about any method are learned only through experience. Success with any one of these methods will depend on using it properly. Be sure that the plants are entirely covered with dust or spray. Begin early and do not skip treatments for any reason. Apply the full quantities of materials recommended.

An adjacent unsprayed bed that set 1.7 acres per 100 square yards. The few plants that survived were much delayed.



Gas Treatments

If you use gas treatments, you can wait until blue mold appears before beginning. Have your materials purchased and your covers ready. Treat promptly following the very first appearance of mold. When the disease is present, treat the bed for 3 consecutive nights, and thereafter twice each week. Many growers prefer to use the 3-night treatment exclusively, repeating it whenever mold is found.

The material used is Parabacco, or P. D. B. (paradichlorobenzene). Crystals of grade No. 6 are the best size. The cost of P. D. B. per 100 square yards per season is about \$4.50.

Stretch the regular thin cotton cloth (with no holes) tightly, so that it is 8 to 14 inches above the ground. Scatter the crystals over this cover about sundown.

Use 3 pounds per 100 square yards ordinarily, but only 2 pounds in warm weather. If the heavier cover used to hold in the vapors is thoroughly wet, 1½ pounds is enough. Straw beds that have no side walls, or other beds where the cotton is placed directly on top of the plants, should never receive more than 1½ to 2 pounds.

A good grade of muslin sheeting or closely woven cotton fertilizer bags sewed together make a desirable heavy cover. One cover can be used alternately to gas two beds. These covers are useful also in protecting beds against frost.

As soon as the crystals are scattered, draw the heavy cover over the bed and fasten it tightly around the sides to hold in the vapors. No gas treatment will be successful without this cover, because the vapor must be held in overnight to control blue mold.

Begin the treatment about sundown and remove the heavy cover between 8 and 10 o'clock in the morning, before the sun gets very warm. During cool weather the crystals vaporize slowly and it is desirable to leave the heavy cover on longer.

Spray Treatments

Spray treatments must be begun ahead of the disease. In Georgia and South Carolina, in areas where blue mold is a regular problem, begin spraying when the plants are the size of a dime. In areas where it is less serious, begin with the first report of infection in the locality. Spray twice a week. The first applications can be made through the covers if they are stretched tightly above the plants.

Various kinds of sprayers can be used, but the barrel and wheelbarrow types are especially well suited to tobacco-bed work. It is important to have at least 25 feet of hose and a spray rod 6 to 8 feet long.



A long spray rod with at least 25 feet of hose is necessary for good spraying. The first applications may be sprayed through the cotton if it is stretched tight.

Fermate Spray

The formula is 1½ pounds of Fermate to 50 gallons of water. This may be increased to 2 pounds, particularly during periods when mold is active. A wetting agent, such as 8 ounces of Vatsol O. T. C. or 4 ounces of Vatsol K, will help get the Fermate mixed with the water. The cost of Fermate for each 100 square yards per season will be about \$1.50.

Place the Fermate, with or without a wetting agent, in a fruit jar or other tight container, add a little water, and shake until all the powder is wet. Mix with the full quantity of water, and the spray is ready to use. Keep the mixture well agitated while spraying.

Begin early, when the plants are about the size of a dime; spray regularly, twice a week; and apply enough spray. Eight to twelve applications will be necessary for moderate to severe attacks. The quantities of the spray that should be applied per 100 square yards of bed are as follows:

Applications:	Gallons
First to fourth	3 to 3½
Fifth and sixth	4
Seventh and subsequent	5 to 6

Fermate spray leaves a black deposit on the tobacco plants. If this is washed off by a rain, repeat the treatment at once. Without the black deposit there is little protection. Any time that mold is found in a sprayed bed, give the maximum application—5 or 6 gallons to 100 square yards—regardless of the size of the plants. Regular spraying must be continued as long as protection is needed.

Bismuth Subsalicylate Spray

The formula is 12 ounces of finely powdered bismuth subsalicylate, 8 ounces of Vatsol O. T. C. or 4 ounces of Vatsol K, and water to make 50 gallons. This mixture must be well agitated while being used. The cost of the material for each 100 square yards per season will be about \$2.

Blue mold protection obtained with the bismuth spray lasts longer than that with the Fermate. A total of seven or eight applications should be sufficient, even during a severe blue mold season. Best results with bismuth are had by spraying heavily and early. The rates of application per 100 square yards of bed, beginning with plants the size of a dime and spraying twice weekly, are as follows:

Applications:	Gallons
First to fourth.	3 to 3½
Fifth to eighth.	5 to 6



An effective dusting outfit.



A small puff duster, suitable only for very small areas.

Copper Oxide-Cottonseed Oil Spray

The formula is 8 ounces of yellow Cuprocide, 8 to 12 ounces of Vatsol O. T. C. or 4 to 6 ounces of Vatsol K, 2 quarts of cottonseed oil (salad oil), and 50 gallons of water. This was the first blue mold spray developed, and its preparation has been fully described and is generally well known. The Fermate and bismuth subsalicylate sprays are more commonly used at present.

Dust Treatments

For dust treatments the formula is 7½ pounds of Fermate and 42½ pounds Pyrax (pyrophyllite) or other suitable inert material. This makes a 15 per cent dust. Dusts should be mixed not more than 6 weeks in advance of use and stored in a dry place. Dust treatments—just as spray treatments—should begin before blue mold appears. Dependable figures on the cost of the dust are not available.

Use a good crank-type duster, though small areas can be treated with a small puff-type duster. To make the dust flow evenly, fill the hopper not more than two-thirds full. Apply the dust early in the morning

when the air is quiet and the plants are moist with dew. The usual plant bed is 5 yards wide or more, and the cotton cover must be removed to dust. Narrow beds—3 or at most 4 yards wide—with side walls that hold the cotton well above the plants can be dusted through this cover. After each treatment all exposed leaf surface should show a coating of dust.

Begin early, with plants the size of a dime, dust regularly twice a week, and apply enough dust. The quantities to be applied to each 100 square yards of bed are as follows:

Applications:	Pounds
First to fourth.....	1 to 1½
Fifth and sixth.....	2 to 2½
Seventh and subsequent.....	3 to 3½

The 3- to 3½-pound rate is always used during the 2 weeks before transplanting.

When a dust application is washed off by rain while blue mold is active, repeat the treatment at once. If blue mold is seen in a bed that is being dusted, increase the rate and make three instead of two applications that week. Eight to twelve applications will be required.

The control of blue mold obtained from dusting has been fully equal to that from spraying. About twice as much actual Fermate is applied in the dust as compared with the spray.

These recommendations are based on studies made by the Bureau of Plant Industry, Soils, and Agricultural Engineering in cooperation with the Georgia Coastal Plain Experiment Station; the State Agricultural experiment stations of South Carolina, North Carolina, Tennessee, and Maryland; and the North Carolina Department of Agriculture.

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